

Monitoring Completed Navigation Projects (MCNP) Program

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Funding Source

O&M



US Army Corps
of Engineers

Coastal and Hydraulics Laboratory - ERDC

MCNP Projects Defined As:

- Deep- and Shallow-Draft Navigation Projects Located in the Coastal Zone, Estuaries, Rivers, Lakes, and Reservoirs
- Completed Navigation Projects Operated and Maintained by the Corps of Engineers



MCNP Monitoring Sites



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Recently Completed MCNP Projects



Marseilles Lock and Dam, IL

Boston Harbor Confined Aquatic Disposal Cells,
MA



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Marseilles Lock and Dam, IL

Monitoring Study

- Pool tolerances for remote operation system

Vibrations in submersible tainter gates

Ice passage through tainter gates



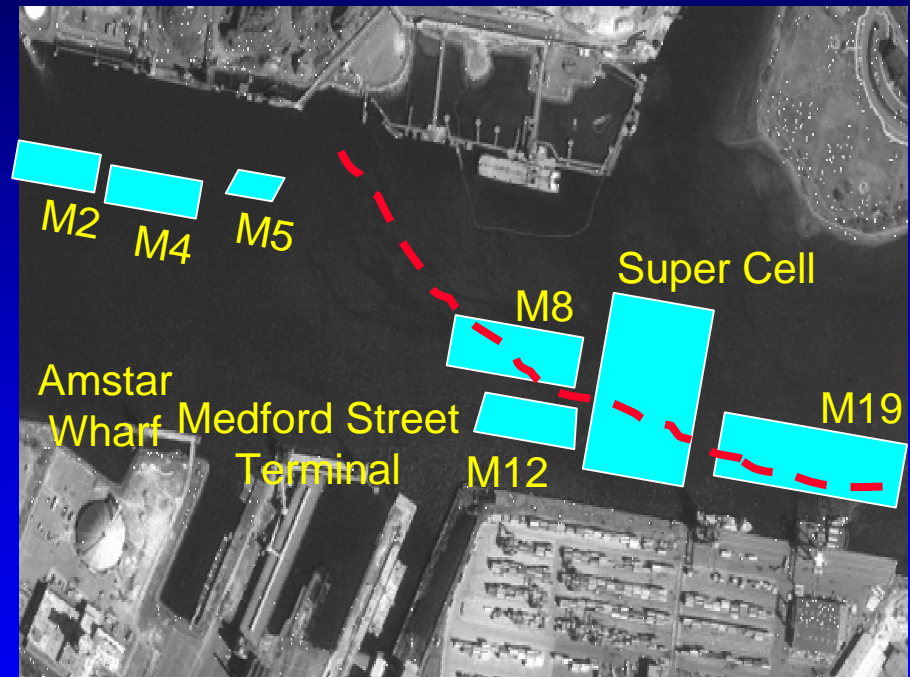
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Boston Harbor CAD Cells, MA

Monitoring Study

- Resuspension during dredging
- Resuspension prior to capping
- Sand cap stability



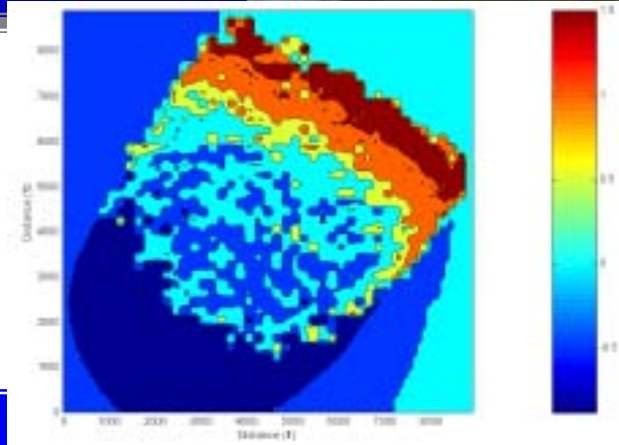
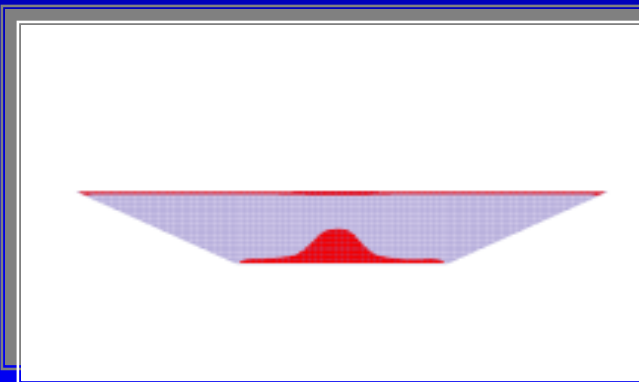
Boston Harbor CAD Cells, MA

PRODUCTS:

CHETN – Comparison of Bucket Performance

CHETN – Dredged Material Capping Simulation

TR: Final Monitoring Report



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Ongoing MCNP Projects

Periodic Inspections (Kahului, Laupahoehoe, Nawiliwili Harbor, Breakwaters; Ofu Harbor Breakwater)

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Morro Bay Harbor, CA

Tedious Creek, MD

Upper MS River Training Structures

Tom Bevill Lock and Dam, AL

Aguadilla Harbor, Puerto Rico



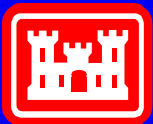
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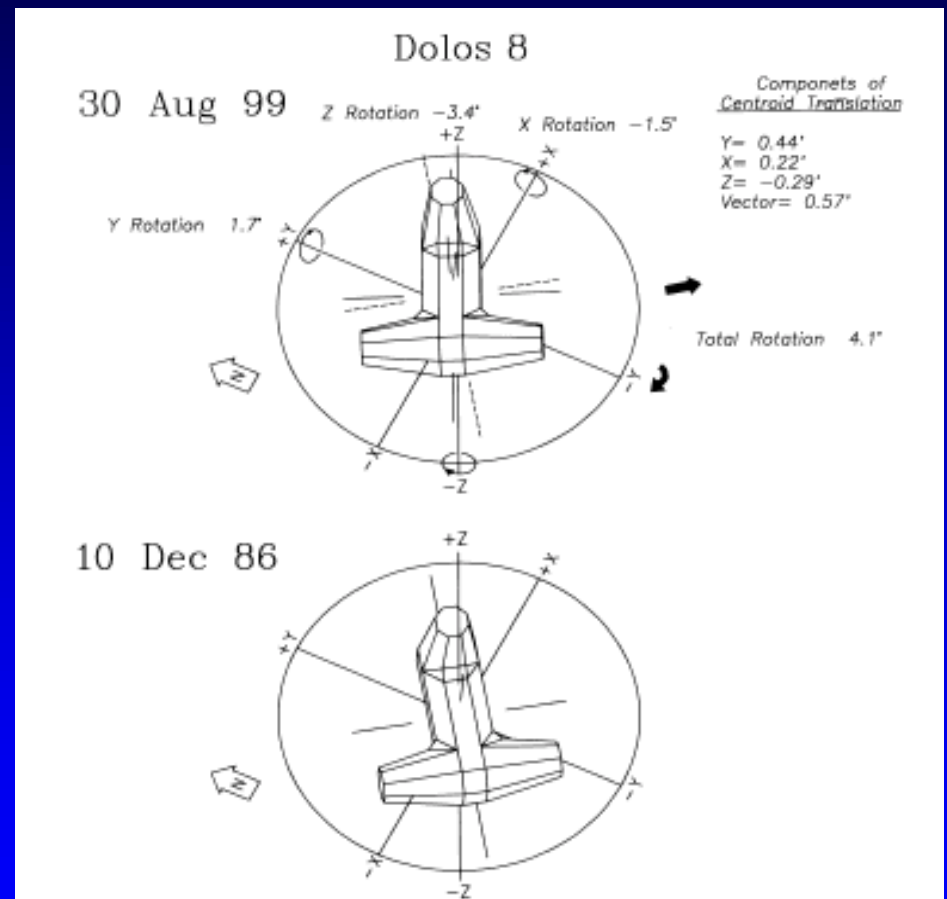
Periodic Inspections

Periodic low-level monitoring of coastal structures to determine their response to the environment over a period of years

Use relatively low-cost remote sensing technologies



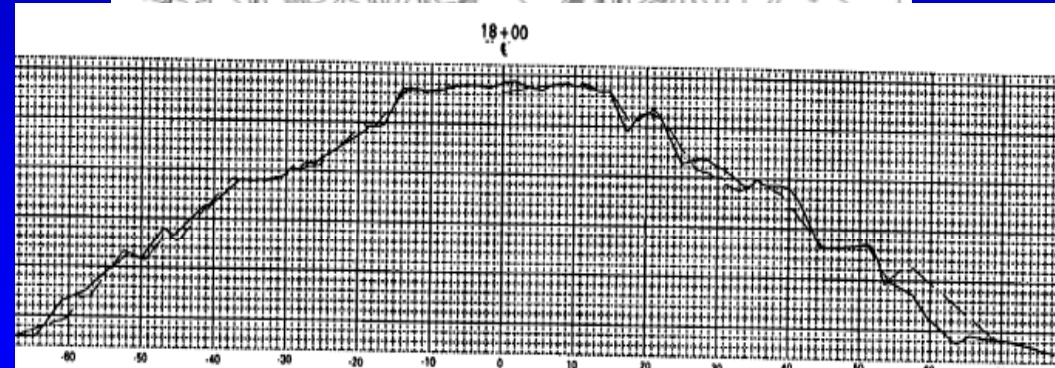
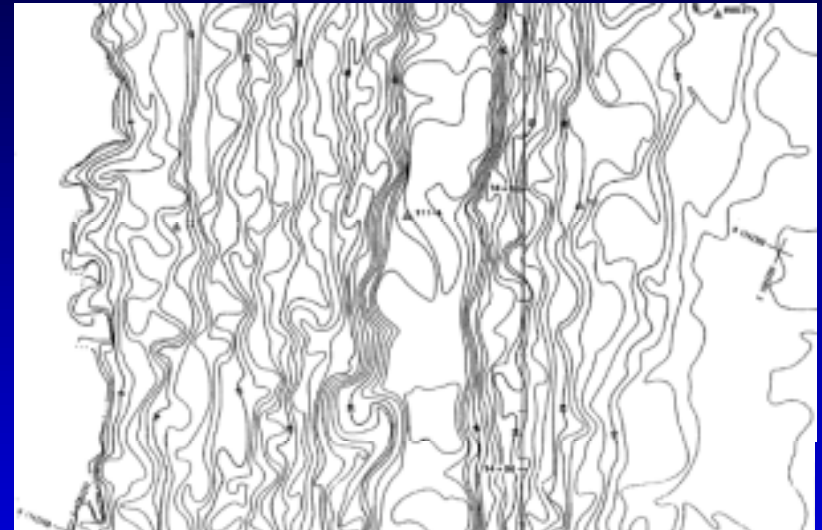
Periodic Inspections



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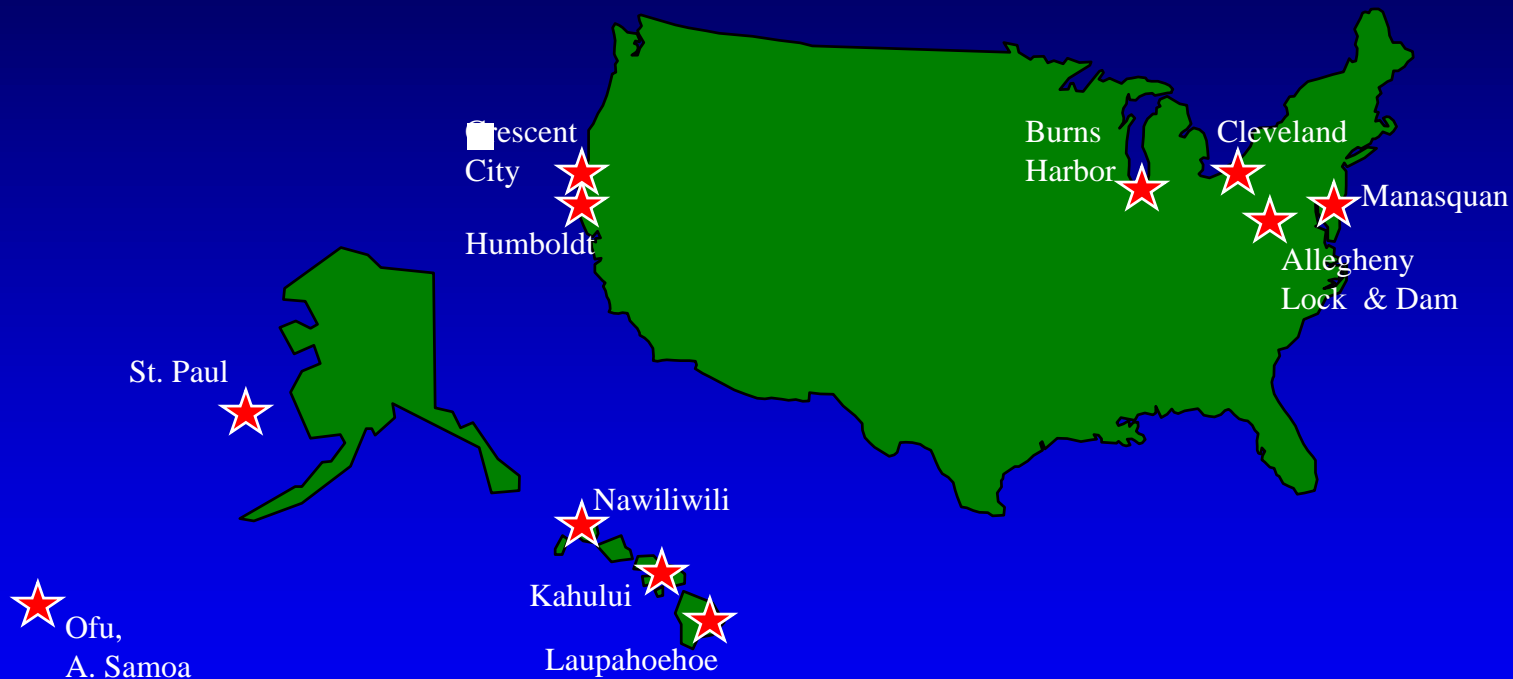
Periodic Inspections



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MCNP Periodic Inspections



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Periodic Inspections



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Morro Bay, CA

Monitoring Study

Wave measurements
(inside and outside the
harbor)

Tidal currents

Bathymetry

Structure stability



Morro Bay, CA

PRODUCTS:

CHETN - Physical/Numerical Model and
Prototype Wave Data Comparison

CHETN – Sedimentation Rates vs.
Predictions

TR - Final Monitoring Report



Tedious Creek, MD

Monitoring Study

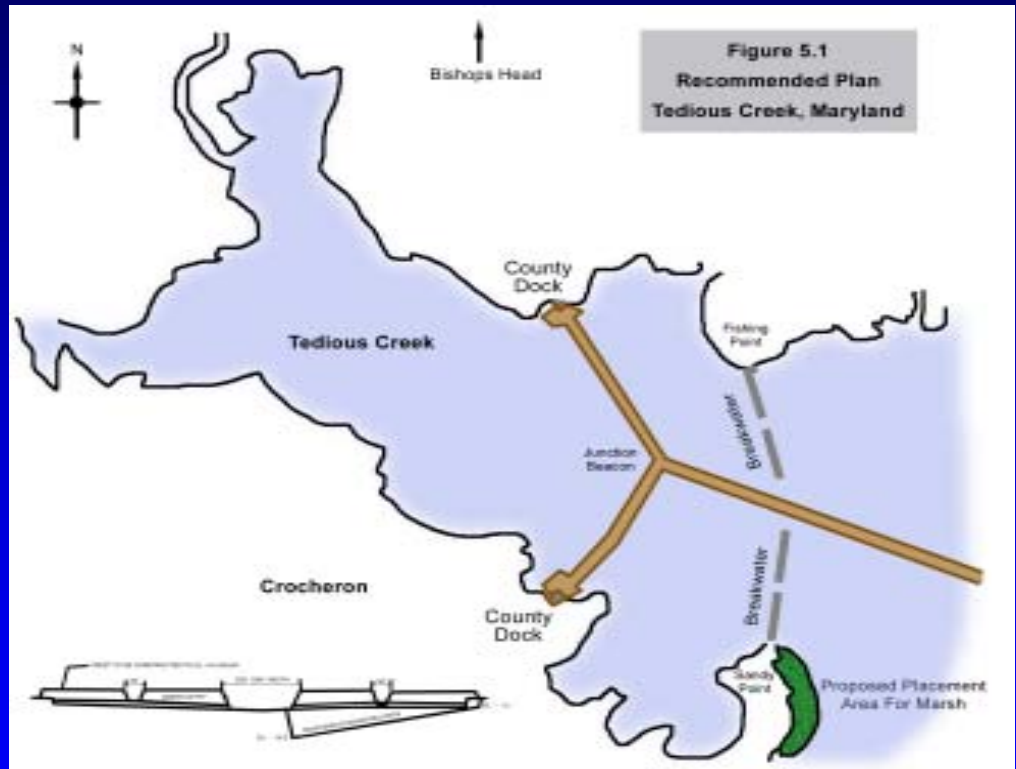
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Wave measurements

Tidal els/currents

Sedimentation processes

Wetland accretion/erosion

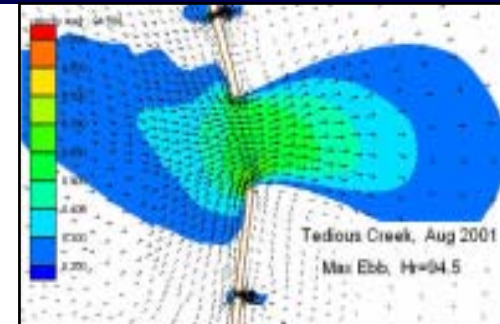
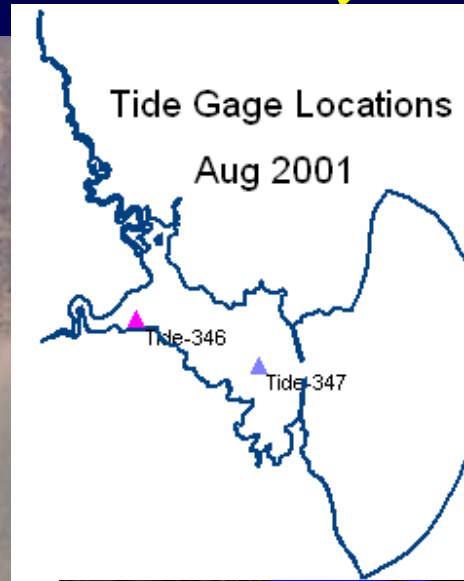
Structure stability



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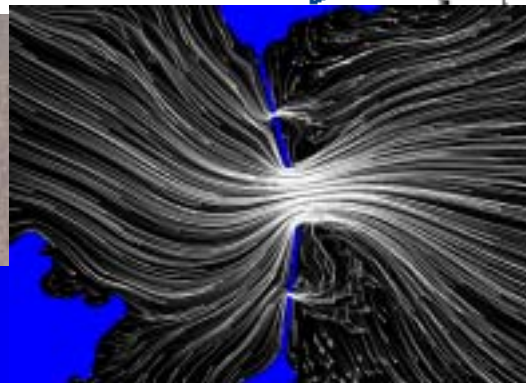
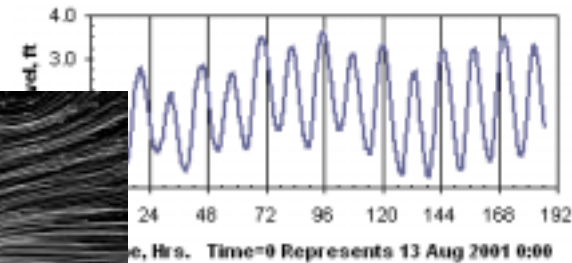
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Tedious Creek, MD



Tide-349

Tedious Creek: TG 349, Aug 2001



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Upper Mississippi River Training Structures

Monitoring Study

Bathymetry

Velocity fields

Static velocity profiles

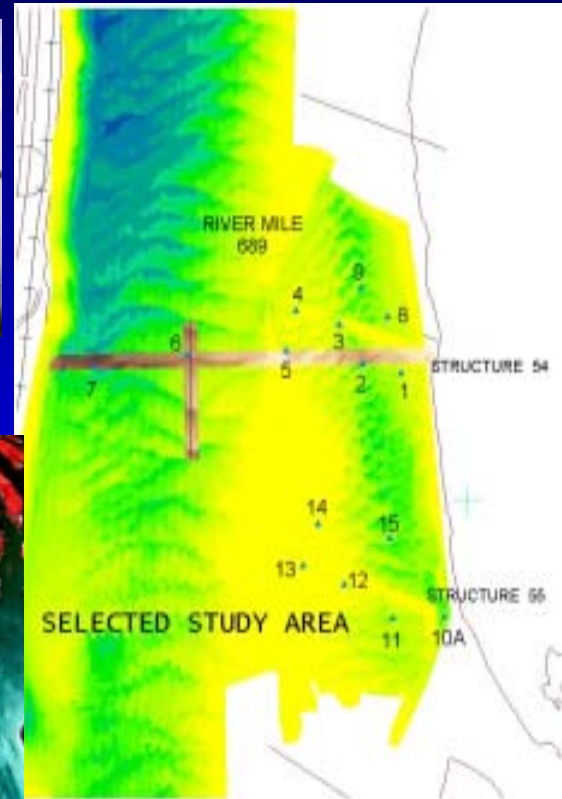
Suspended sediment
samples

Bed load measurements

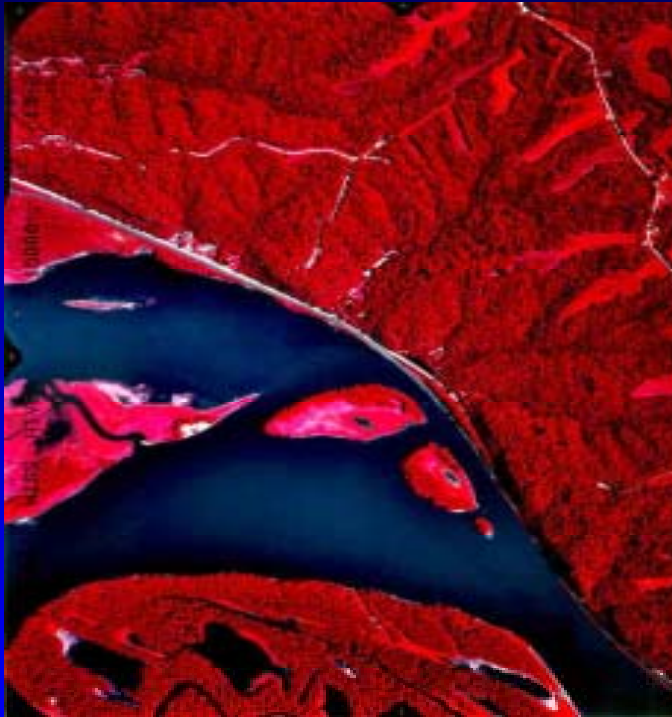
Bed material samples



Upper Mississippi River Training Structures



Upper Mississippi River Training Structures



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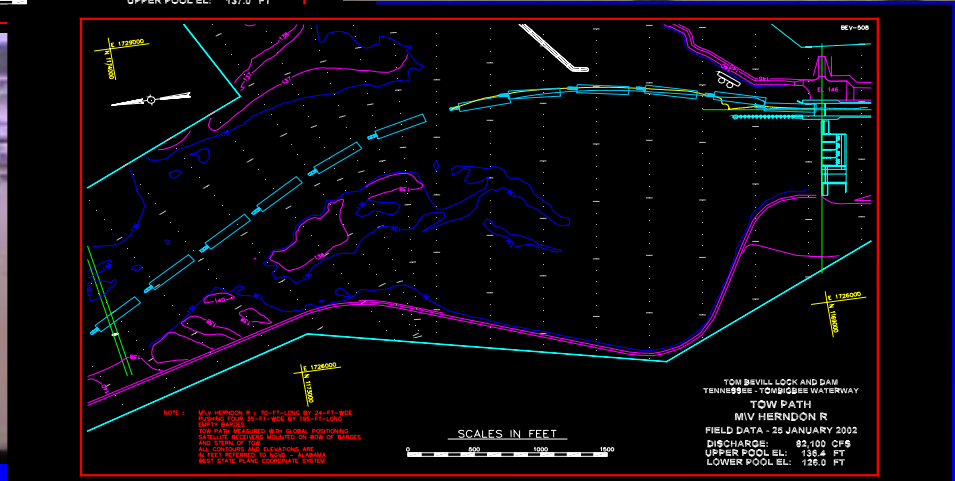
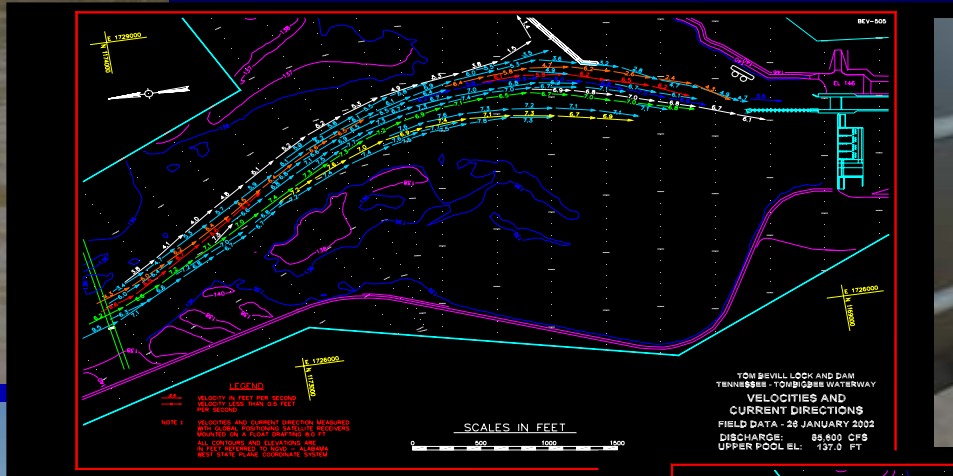
Tom Bevill Lock and Dam, AL

Monitoring Study

- Time-lapse video (vessels)
- Current Data
- Bathymetric Data
- Tow Track Data
- Pool El/Gate Opening
- Head Differential



Tom Bevill Lock and Dam, AL



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Aguadilla Harbor, Puerto Rico

Monitoring Study

- Wave measurements
- Beach/hydrographic surveys
- Sand transport through breakwater
- Structure stability



Aguadilla Harbor, Puerto Rico



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New MCNP Projects

Houston Ship Channel, TX



Pocket Wave Absorbers, Great Lakes

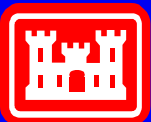
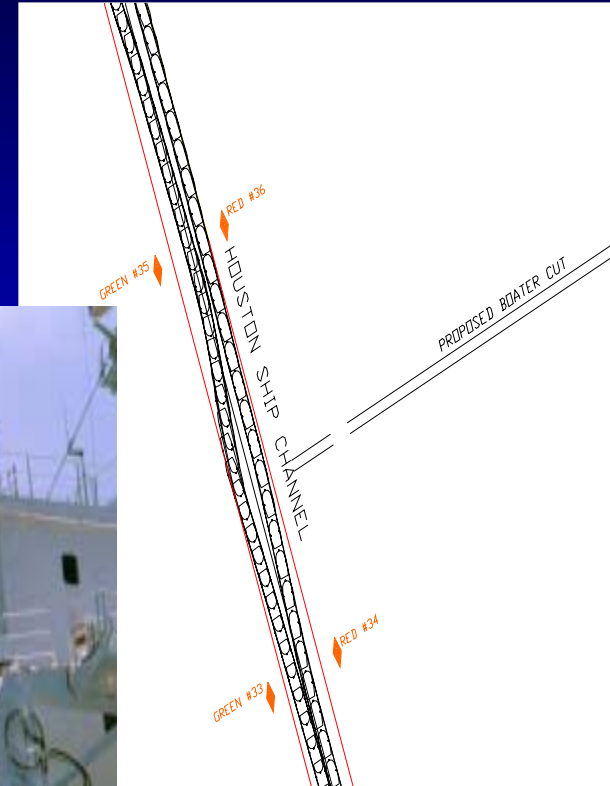
Greenville Bridge Reach Bendway Weirs, MS



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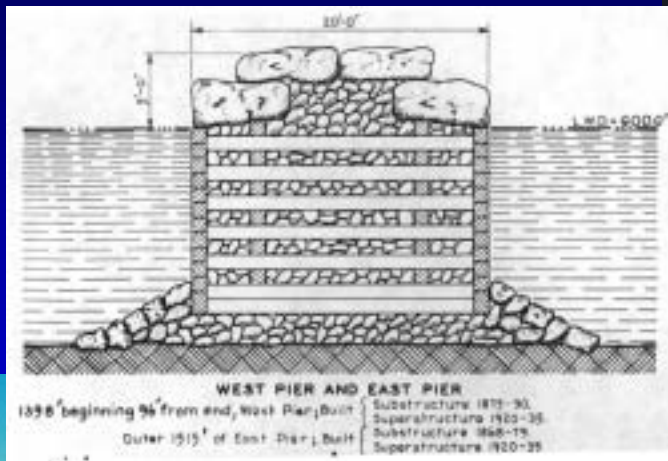
Houston Ship Channel, TX



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Pocket Wave Absorbers, Great Lakes



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Coastal and Hydraulics Laboratory - ERDC

Greenville Bridge Reach Bendway Weirs, MS



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Past MCNP Products

- Forty-Two Technical Reports/Misc Papers Published
- Twenty Technical Notes Published
- Numerous Journal Articles/Conference Papers Published



Improvement of Technology Transfer/Infusion Plans

Identify Project Benefits Derived from
Lessons Learned through “Pull”
Technology Transfer

Publish more CHETNs

Enhance MCNP Web Site





Monitoring Completed Navigation Projects Program

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Program Description

The Monitoring Completed Navigation Projects (MCNP) program evaluates the performance of completed civil works navigation projects. Its objective is to obtain information for verifying or improving navigation project performance. Monitoring is conducted to (1) determine if the project is functioning as designed, (2) improve design procedures, (3) improve construction methods, and (4) improve operations and maintenance techniques.

For complete description in Adobe PDF format [click here](#).

To get Adobe PDF Reader [click here](#).



Program Manager

[Robert Bottin](#)

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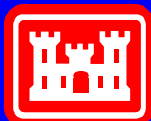
Charles Chesnutt

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